

DOUBLE SILICON-ON-INSULATOR (SOI) METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (MOSFET) STRUCTURES

ABSTRACT OF THE DISCLOSURE

A SOI MOSFET structure having a reduced step height between the various semiconductor layers without adversely affecting the junction capacitance of the semiconductor device formed on the uppermost semiconductor layer as well as a method of fabricating the same are provided. The structure of the present invention includes an elevated device region having at least one semiconductor device located on a second semiconductor layer. The elevated device region further includes a source/drain junction that extends from the second semiconductor layer down to a first buried insulator layer that is located on an upper surface of the semiconductor substrate. The structure also includes a recessed device region having at least one semiconductor device located atop a first semiconductor layer which is located on an upper surface of the first buried insulator. An isolation region separates the elevated device region from the recessed device region.